	A	A	B	S	T	U	V	W
1		g =	6.19%	-2.80688266	7	1		19.02828287
2		gnppi =	@AVG(S42..S48)	-2.67211322	19	1	8 PERIOD	19.11356205
3		alpha (% slc) =	65.71%	-2.63703958	32	1	TOTAL SW RATE/MOU	19.10820345
4				-2.71890020	50	1	REGRESSION	19.31459223
5			0.00%	-2.74161328	63.5	1	----------	19.44856070
6		INDIVX	4.28%	-2.78584210	74	1		19.53857247
7		----------		-2.76115241	86	1		19.60447847
8			CL	-2.79317982	98	1		19.67145657
9			----------					
10		Per Line X =	-0.08%					
11		Compromise X =	2.96%	Regression Output:				
12				Constant				0 Constant
13				Std Err of Y Est				0.0597 Std Err of Y Est
14			CL PCI	R Squared				0.1624 R Squared
15			----------	No. of Observations				8 No. of Observat
16		Per Line	98.07%	Degrees of Freedom				6 Degrees of Fre
17								
18				X Coefficient(s)		-0.0007		-2.6994 X Coefficient(s)
19		UNITARYX		Std Err of Coef.		0.0007		0.0428 Std Err of Coef.
20		----------						
21								
22		Per Line X =	1.64%			0.0669		
23		Compromise X =	2.67%			0.0625		
24						-0.90%		
25								
26								
27								
28		Compromise						
29								
30								
31								
32								
33								
34								
35								
36								

		GNP-PI*** START QUARTER	GNP-PI*** END QUARTER	analysis period	data source period
37					
38					
39					
40	gnp-pi				
41	4.12%	218.7	227.7	1 = 6/84 - 5/85	82/4 83/4
42	(U42/T42)-1	227.6	237.1	2 = 6/85 - 5/86	83/4 84/4
43	(U43/T43)-1	110	113.8	3 = 7/86 - 6/87	84/4 85/4
44	(U44/T44)-1	114.7	118.6	4 = 1988	86/2 87/2
45	(U45/T45)-1	119.7	124.9	5 = 4/89 -12/89	87/3 88/3
46	(U46/T46)-1	123.3	129.3	6 = 1990	88/2 89/2
47	(U47/T47)-1	131.2	137.5	7 = 1991	89/4 90/4
48	(U48/T48)-1	114.8	118.7	8 = 1992	90/4 91/4

A	G	H
25		g factor
26		
27		(A)
28		
29	Ameritech	7.79%
30	Bell Atlantic	6.03%
31	Bell South	5.56%
32	Nynex	5.94%
33	Pac Tel	8.64%
34	Southwestern	6.59%
35	US West	7.43%
36	Centel	5.40%
37	Cincinnati	6.04%
38	Contel	7.49%
39	GTE	6.64%
40	Lincoln	6.94%
41	Rochester	6.61%
42	SNETCO	4.78%
43	United	9.10%
44		
45	TOT	6.69%

A	G	H
25		g factor
26		
27		(A)
28		
29	Ameritech	7.79%
30	Bell Atlantic	6.03%
31	Bell South	5.56%
32	Nynex	5.94%
33	Pac Tel	8.64%
34	Southwestern	6.59%
35	US West	7.43%
36	Centel	5.40%
37	Cincinnati	6.04%
38	Contel	7.49%
39	GTE	6.64%
40	Lincoln	6.94%
41	Rochester	6.61%
42	SNETCO	4.78%
43	United	9.10%
44		
45	TOT	(1+0.1)/(1+0.031)-1

	A	A	B
1		g =	4.75%
2		gbar =	2.60%
3		gnppi =	3.90%
4		Per Line X =	2.97%
5		50/50 X =	4.17%
6		alpha =	61.38%
7		Compromise X =	3.43%

	A	A	B
1		g =	1.08/1.031-1
2		gbar =	2.60%
3		gnppi =	3.90%
4		Per Line X =	2.97%
5		50/50 X =	4.17%
6		alpha =	61.38%
7		Compromise X =	3.43%

XCALCLEC Average g Value View

	A	A	B	C	D	V	W	X	Y	Z	AA	AB	AC	AD
1		g =	6.19%	based on unadj. CL minutes			19.02828287	7	1		18.51567708	7	1	
2		gnppi =	4.06%			8 PERIOD	19.11356205	19	1	8 PERIOD	18.54569309	19	1	8 PERIOD
3		alpha (% slc) =	65.71%	based on unadj. rev.		TOTAL SW RATE/MOU	19.10820345	32	1	CL MOU	18.56964941	32	1	LINES
4						REGRESSION	19.31459223	50	1	REGRESSION	18.61669458	50	1	REGRESSION
5			0.00%				19.44856070	63.5	1		18.64858065	63.5	1	
6		INDIVX	4.28%				19.53857247	74	1		18.69192902	74	1	
7							19.60447847	86	1		18.71591324	86	1	
8			CL	TS			19.67145657	98	1		18.74011062	98	1	
9														
10		Per Line X =	-0.08%	3.44%	back-solve for 4 Xs based on fitted values from regressions									
11		Compromise X =	2.96%	3.44%	(formula cells = M32,M39,Q32)			Regression Output:			Regression Output:			
12							0	Constant		0	Constant			0
13				% change	% change		0.0597	Std Err of Y Est		0.04034938	Std Err of Y Est			0.00633965
14			CL PCI	CCL	TS		0.1624	R Squared		0.97740857	R Squared			0.99494241
15							8	No. of Observations		8	No. of Observations			8
16		Per Line	98.07%	5.55%	0.63%		6	Degrees of Freedom		6	Degrees of Freedom			6
17														
18							-2.6994	X Coefficient(s)	0.007565688	18.9472807068	X Coefficient(s)		0.00253476643	18.4944456894
19		UNITARYX					0.0428	Std Err of Coef.	0.000469577	0.02896676658	Std Err of Coef.		0.00007377938	0.00455122583
20														
21														
22		Per Line X =	1.64%	weighted average of individual per line Xs					178525235.6				109582588.346	
23		Compromise X =	2.67%	back-solve for comp. X based on total % change from individual Xs					355387096.6				138012221.28	
24				(formula cell = E28)					9.47%				3.08%	

	A	A	B	C	D	V	W	X	Y	Z	AA	AB	AC	AD
1		g =	(1+Y24)/(1+AC24)-1	based on unadj. CL minutes			19.02828287	7	1		18.51567708	7	1	
2		gnppi =	4.06%			8 PERIOD	19.11356205	19	1	8 PERIOD	18.54569309	19	1	8 PERIOD
3		alpha (% slc) =	65.71%	based on unadj. rev.		TOTAL SW RATE/MOU	19.10820345	32	1	CL MOU	18.56964941	32	1	LINES
4						REGRESSION	19.31459223	50	1	REGRESSION	18.61669458	50	1	REGRESSION
5			0.00%				19.44856070	63.5	1		18.64858065	63.5	1	
6		INDIVX	4.28%				19.53857247	74	1		18.69192902	74	1	
7							19.60447847	86	1		18.71591324	86	1	
8			CL	TS			19.67145657	98	1		18.74011062	98	1	
9														
10		Per Line X =	-0.08%	3.44%	back-solve for 4 Xs based on fitted values from regressions									
11		Compromise X =	2.96%	3.44%	(formula cells = M32,M39,Q32)			Regression Output:				Regression Output:		
12							0	Constant			0	Constant		0
13				% change	% change		0.0597	Std Err of Y Est			0.04034938	Std Err of Y Est		0.00633965
14			CL PCI	CCL	TS		0.1624	R Squared			0.97740857	R Squared		0.99494241
15							8	No. of Observations			8	No. of Observations		8
16		Per Line	98.07%	5.55%	0.63%		6	Degrees of Freedom			6	Degrees of Freedom		6
17														
18							-2.6994	X Coefficient(s)	0.0075656884		18.9472807068	X Coefficient(s)	0.00253476643	18.4944456894
19		UNITARYX					0.0428	Std Err of Coef.	0.0004695768		0.02896676658	Std Err of Coef.	0.00007377938	0.00455122583
20														
21														
22		Per Line X =	1.64%	weighted average of individual per line Xs					178525235.64				109582588.346	
23		Compromise X =	2.67%	back-solve for comp. X based on total % change from individual Xs					355387096.62				138012221.28	
24				(formula cell = E28)					(+Y18+1)^(12)-1				(+AC18+1)^(12)-1	

INDIVX Dif.. ..it Weights Value View

A	C	D	E	F	G	H	I	J	K	L	M	N	O		
13										CL X FACTOR			TS X FACTOR		
14									GNP-PI	3.90%					
15									Per Line X	2.32%	Per Line PCI and ROR CCL		3.64%		
16									50/50 X	5.61%	50/50 PCI and ROR CCL		3.64%		
17															
18															
19															
20								dZ		0					
21															
22															
23								Common Line PCI					Percent Change i		
24	Common Line	SLC													
25	Revenue	Revenue				g factor	% SLC	Per Line	50/50 Formula	API Formula	USTA Formula	2nd 50/50 Formula	Per Line		
26															
27	(3)	(4)				(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)		
28															
29	$803,888	$522,732			Ameritech	7.79%	65.03%	94.24%	94.74%	100.15%	103.90%	100.15%	-3.03%		
30	$988,820	$619,351			Bell Atlantic	6.03%	62.64%	95.81%	95.50%	100.95%	103.90%	100.95%	-1.70%		
31	$1,483,274	$843,958			Bell South	5.56%	56.90%	96.23%	95.70%	101.16%	103.90%	101.16%	-1.80%		
32	$1,186,948	$744,876			Nynex	5.94%	62.76%	95.89%	95.54%	100.99%	103.90%	100.99%	-1.60%		
33	$843,377	$597,438			Pac Tel	8.64%	70.84%	93.50%	94.38%	99.77%	103.90%	99.77%	-2.97%		
34	$838,123	$538,948			Southwestern	6.59%	64.30%	95.30%	95.25%	100.69%	103.90%	100.69%	-2.03%		
35	$988,682	$630,784			US West	7.43%	63.80%	94.55%	94.89%	100.31%	103.90%	100.31%	-2.85%		
36	$46,494	$18,384			Centel	5.40%	39.54%	96.38%	95.77%	101.24%	103.90%	101.24%	-2.64%		
37	$51,043	$33,261			Cincinnati	6.04%	65.06%	95.80%	95.49%	100.94%	103.90%	100.94%	-1.41%		
38	$95,569	$48,660			Contel	7.49%	50.91%	94.50%	94.87%	100.28%	103.90%	100.28%	-3.97%		
39	$1,080,841	$607,724			GTE	6.64%	56.23%	95.25%	95.23%	100.66%	103.90%	100.66%	-2.84%		
40	$11,300	$7,106			Lincoln	6.94%	62.88%	94.98%	95.10%	100.53%	103.90%	100.53%	-2.51%		
41	$21,563	$13,719			Rochester	6.61%	63.62%	95.28%	95.24%	100.68%	103.90%	100.68%	-2.13%		
42	$144,710	$85,714			SNETCO	4.78%	59.23%	96.95%	96.05%	101.53%	103.90%	101.53%	-0.86%		
43	$268,658	$161,332			United	9.10%	60.05%	93.11%	94.19%	99.57%	103.90%	99.57%	-4.71%		
44															
45	$8,853,290	$5,473,989			TOT	6.69%	61.83%	95.21%	95.21%	100.64%	103.90%	100.64%	-2.39%		
46															
47															
48								Traffic Sensitive Rate Change					Switched Access		
49															
50								Per Line	50/50 Formula				Per Line		
51															
52								(C)	(D)				(H)		
53															
54					TOT			0.26%	0.26%				-0.35%		

INDIVX ent Weights Text View

	K	L	M	N	O
		CL X FACTOR			TS X FACTOR
	GNP-PI	3.90%			
	Per Line X	0.0232	Per Line PCI and ROR CCL		0.0364
	50/50 X	5.61%	50/50 PCI and ROR CCL		3.64%

dZ 0

	Common Line Revenue	SLC Revenue		g factor	% SLC	Common Line PCI Per Line	50/50 Formula	API Formula	USTA Formula	2nd 50/50 Formula	Percent Change in CCL Rate Per Line
	(3)	(4)		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
29	$803,888	$522,732	Ameritech	7.79%	65.03%	94.24%	94.74%	100.15%	103.90%	100.15%	-3.03%
30	$988,820	$619,351	Bell Atlantic	6.03%	62.64%	95.81%	95.50%	100.95%	103.90%	100.95%	-1.70%
31	$1,483,274	$843,958	Bell South	5.56%	56.90%	96.23%	95.70%	101.16%	103.90%	101.16%	-1.80%
32	$1,186,948	$744,876	Nynex	5.94%	62.76%	95.89%	95.54%	100.99%	103.90%	100.99%	-1.60%
33	$843,377	$597,438	Pac Tel	8.64%	70.84%	93.50%	94.38%	99.77%	103.90%	99.77%	-2.97%
34	$836,123	$538,948	Southwestern	6.59%	64.30%	95.30%	95.25%	100.69%	103.90%	100.69%	-2.03%
35	$986,682	$630,784	US West	7.43%	63.80%	94.55%	94.89%	100.31%	103.90%	100.31%	-2.85%
36	$46,494	$18,384	Centel	5.40%	39.54%	96.38%	95.77%	101.24%	103.90%	101.24%	-2.64%
37	$51,043	$33,261	Cincinnati	6.04%	65.08%	95.80%	95.49%	100.94%	103.90%	100.94%	-1.41%
38	$95,569	$48,660	Contel	7.49%	50.91%	94.50%	94.87%	100.28%	103.90%	100.28%	-3.97%
39	$1,080,841	$607,724	GTE	6.64%	56.23%	95.25%	95.23%	100.66%	103.90%	100.66%	-2.84%
40	$11,300	$7,108	Lincoln	6.94%	62.86%	94.98%	95.10%	100.53%	103.90%	100.53%	-2.51%
41	$21,563	$13,719	Rochester	6.61%	63.62%	95.28%	95.24%	100.68%	103.90%	100.68%	-2.13%
42	$144,710	$85,714	SNETCO	4.78%	59.23%	96.95%	96.05%	101.53%	103.90%	101.53%	-0.86%
43	$268,658	$161,332	United	9.10%	60.05%	93.11%	94.19%	99.57%	103.90%	99.57%	-4.71%
44											
45	@SUM(C43..C29)	@SUM(D43..D29)	TOT	(1+0.1)/(1+0.031)-1	61.83%	(1+(((C45+$DZ)/C45)*(($GNPPI-$XPL-H45)/(1+H45))))	95.21%	100.64%	103.90%	100.64%	(C45*(J45-1)+D45*(H45/(1+H45)))/(C45-D45)

	Traffic Sensitive Rate Change Per Line	50/50 Formula	Switched Access Rate Change Per Line
	(C)	(D)	(H)
54 TOT	+GNPPI-O15	0.26%	@372/(@888+@037)*O45+@037/(@888+@037)*J54

	A	A	B	C	D	E	F	G
1		g =	4.75%	Method 1	0.36%	|	Percent change	
2		gbar =	2.60%	Method 2	0.28%	|	in CCL rate	
3		gnppi =	3.90%	Method 3	0.23%	|	for 1% increase	
4		Per Line X =	2.97%	Method 4	-0.48%	|	in g	
5		50/50 X =	4.17%			|		
6		alpha =	61.38%	50/50	0.27%	|		
7		Compromise X =	3.43%	Per Line	-0.93%	|		
8								
9					% change		% change	% change
10					CCL		TS	TotSw
11		3372	21.699768	Method 1	0.56%		0.93%	0.82%
12		8037	-22.02138	Method 2	0.43%		0.93%	0.79%
13		2555	-7.0007	Method 3	0.36%		0.93%	0.76%
14			-7.322312	Method 4	-1.21%		0.93%	0.30%
15								
16		($59.9)	-38.18578	50/50	0.64%		-0.27%	-0.00%
17		$59.8	37.7739	Per Line	-2.23%		0.93%	-0.00%
18		$19.0	12.0085	Compromise	-1.13%		0.47%	-0.00%

	A	A	B	C	D	E	F	G
1		g =	1.08/1.031-1	Method 1	0.36%	Percent change		
2		gbar =	2.60%	Method 2	0.28%	in CCL rate		
3		gnppi =	0.039	Method 3	0.23%	for 1% increase		
4		Per Line X =	2.97%	Method 4	-0.48%	in g		
5		50/50 X =	4.17%					
6		alpha =	0.6138	50/50	0.27%			
7		Compromise X =	0.0343	Per Line	-0.93%			
8								
9					% change		% change	% change
10					CCL		TS	TotSw
11		3372	21.69976782	Method 1	0.56%		0.93%	0.82%
12		8037	-22.02138	Method 2	0.43%		0.93%	0.79%
13		2555	-7.0007	Method 3	0.36%		0.93%	0.76%
14			-7.32231218	Method 4	-1.21%		0.93%	0.30%
15								
16		($59.9)	-38.1857808	50/50	0.64%		-0.27%	-0.00%
17		$59.8	37.7739	Per Line	-2.23%		0.93%	-0.00%
18		$19.0	12.0085	Compromise	(GNPPI-XCOMP-((G/2)*(1-ALPHA)))/((1+(G/2))*(1-ALPHA))		+GNPPI-XCOMP	+((3372/(3372+8037))*D18)+((8037/(3372+8037))*F18)

XCALCLEC

D... ...nt Weights

Value View

	A	B	C	D	E	P	Q	R	W	X	Y	Z	AA	AB	AC	AD
1	g =	6.19%	based on unadj. CL minutes			7	1		19.02828287	7	1		18.51567708	7	1	
2	gnppi =	4.06%				19	1	8 PERIOD	19.11356205	19	1	8 PERIOD	18.54569309	19	1	8 PERIOD
3	alpha (% slc) =	65.71%	based on unadj. rev			32	1	TS RATE/MOU	19.10820345	32	1	CL MOU	18.56964941	32	1	LINES
4						50	1	REGRESSION	19.31459223	50	1	REGRESSION	18.61869458	50	1	REGRESSION
5		0.00%			ALT G retn	63.5	1	----------	19.44856070	63.5	1	----------	18.64858065	63.5	1	----------
6	INDIVX	4.28%			ALT Z perfo	74	1		19.53857247	74	1		18.69192902	74	1	
7	----------					86	1		19.60447847	86	1		18.71591324	86	1	
8		CL	TS			98	1		19.67145657	98	1		18.74011062	98	1	
9																
10	Per Line X =	-0.08%	3.44%	back-solve for 4 Xs based on fitted values from regressions												
11	Compromise X =	2.96%	3.44%	(formula cells = M32,M39, Regression Output:												
12									Regression Output:				Regression Output:			
13			% change	% change	% change			0	Constant			0	Constant			0
14		CL PCI	CCL	TS	TotSw			0.0763	Std Err of Y Est			0.04034938	Std Err of Y Est			0.00633965
15								0.0464	R Squared			0.97740857	R Squared			0.99494241
16	Per Line	98.07%	5.55%	0.63%	1.28%			8	No. of Observations			8	No. of Observations			8
17								6	Degrees of Freedom			6	Degrees of Freedom			6
18							0.0005	-3.7179	X Coefficient(s)		0.007565688	18.9472807068	X Coefficient(s)		0.00253476643	18.4944456894
19	UNITARYX						0.0009	0.0548	Std Err of Coef.		0.000469577	0.02896676658	Std Err of Coef.		0.00007377938	0.00455122583
20	----------															
21																
22	Per Line X =	1.64%	weighted average of individual per line Xs				0.024367175				178525235.6				109582588.346	
23	Compromise X =	2.67%	back-solve for comp. X based on total % change from ind				0.025454421				355387096.6				138012221.28	
24			(formula cell = E28)				0.58%				9.47%				3.08%	
25			% change	% change	% change											
26			CCL	TS	TotSw	2	0.0245									
27						3	0.0247									
28	Compromise		0.95%	1.40%	1.28%	4	0.0248									
29						5	0.0250									
30						6	0.0251									
31						7	0.0253									
32						8	0.0255									
33						2	0.0245									
34						3	0.0247									
35						4	0.0248									
36						5	0.0250									
37						6	0.0251		data							
38						7	0.0253		source							
39						8	0.0255		period							
40						cl unadj rev	slc rev	ts unadj rev								
41						$10,172,842	$1,296,104	$5,461,496	82/4 83/4		7					
42						$10,878,568	$2,484,658	$6,562,000	83/4 84/4		19	12				
43						$10,213,735	$3,646,949	$7,102,456	84/4 85/4		32	13				
44						$10,012,595	$4,563,679	$8,231,744	86/2 87/2		50	18				
45						$9,807,040	$5,703,289	$8,637,220	87/3 88/3		63.5	13.5				
46						$9,568,617	$5,926,881	$8,492,946	88/2 89/2		74	10.5				
47						$9,395,161	$6,062,676	$8,609,845	89/4 90/4		86	12				
48						$9,481,498	$6,230,468	$9,054,015	90/4 91/4		98	12				

	A	B	C	D	E	P	Q	R	W	X	Y	Z	AA	AB	AC	AD
1	g =	(1+Y24)/(1+AC24)-1	based on unadj. CL minutes			7	1		19.02828287	7	1		18.51567708	7	1	
2	gnppi =	@AVG(S42..S48)				19	1	8 PERIOD	19.11356205	19	1	8 PERIOD	18.54569309	19	1	8 PERIOD
3	alpha (% slc) =	+Q48/P48	based on unadj. rev			32	1	TS RATE/MOU	19.10820345	32	1	CL MOU	18.56964941	32	1	LINES
4						50	1	REGRESSION	19.31459223	50	1	REGRESSION	18.61669458	50	1	REGRESSION
5		0.00%			ALT G retrieves the data fro	63.5	1	----------	19.44856070	63.5	1	----------	18.64858065	63.5	1	----------
6	INDIVX	4.28%			ALT Z performs the eight-pen	74	1		19.53857247	74	1		18.69192902	74	1	
7	----------					86	1		19.60447847	86	1		18.71591324	86	1	
8		CL	TS			98	1		19.67145657	98	1		18.74011082	98	1	
9																
10	Per Line X =	-0.000806799175102	0.034370336165867		back-solve for 4 Xs based on fitted values from regressions											
11	Compromise X =	2.98%	3.44%		(formula cells = M32,M39,Q32)	Regression Output:				Regression Output:				Regression Output:		
12									0 Constant				0 Constant			0
13			% change	% change	% change				0.0763 Std Err of Y Est				0.04034938 Std Err of Y Est			0.00633965
14		CL PCI	CCL	TS	TotSw				0.0464 R Squared				0.97740857 R Squared			0.99494241
15									8 No. of Observations				8 No. of Observations			8
16	Per Line	(1+(((P48+0)/P48)*((B2-	(P48*(B16-1)+Q48*(B1	+B2-C10	(((P48-Q48)/(P48+R48))*C16)+((R48/(P48+R48))*				6 Degrees of Freedom				6 Degrees of Freedom			6
17																
18							0.0005		-3.7179 X Coefficient(s)		0.007565688363		18.9472807068 X Coefficient(s)		0.0025347664267	18.4944456894
19	UNITARYX						0.0009		0.0548 Std Err of Coef.		0.000469576806		0.02898678658 Std Err of Coef.		0.0000737793806	0.00455122583
20	----------															
21																
22	Per Line X =	1.64%	weighted average of individual per line Xs				0.024367175				178525235.635				109582588.34637	
23	Compromise X =	0.026655121109648	back-solve for comp. X based on total % change from individual Xs				0.025454421				355387096.6166				138012221.28	
24			(formula cell = E28)				0.58%				(+Y18+1)^(12)-1				(+AC18+1)^(12)-1	
25			% change	% change	% change											
26			CCL	TS	TotSw	2	0.0245									
27						3	0.0247									
28	Compromise		(B2-B23-((B1/2)*(1-B3))	+B2-B23	((+P48-Q48)/(P48-Q48+	4	0.0248									
29						5	0.0250									
30						6	0.0251									
31						7	0.0253									
32						8	0.0255									
33						2	0.0245									
34						3	0.0247									
35						4	0.0248									
36						5	0.0250									
37						6	0.0251		data							
38						7	0.0253		source							
39						8	0.0255		period							
40						cl unadj rev	slc rev	ts unadj rev								
41						$10,172,842	$1,296,104	$5,461,496	82/4 83/4	7						
42						$10,878,568	$2,484,658	$6,562,000	83/4 84/4	19	12					
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46						$9,568,617	$5,926,881	$8,492,948	88/2 89/2	74	10.5					
47						$9,395,161	$6,062,676	$8,609,845	89/4 90/4	86	12					
48						9481498	6230468	9054015	90/4 91/4	98	12					

EX PARTE

United States Telephone Association

1401 H Street, N.W., Suite 600
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(202) 326-7300
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February 24, 1995

Mr. William F. Caton
Secretary
Federal Communications Commission
1919 M Street, N.W. - Room 222
Washington, D.C. 20554

RE: Ex Parte Notice
CC Docket No. 94-1

Dear Mr. Caton:

The attachment to this letter explains how Total Factor Productivity would be calculated each year for purposes of USTA's moving average productivity offset.

As the attachment demonstrates, developing the TFP is a simple eight step process. Ninety percent of the data inputs are available from public sources filed with the FCC.

The original and a copy of this ex parte notice are being filed in the Office of the Secretary. Please include it in the public record of this proceeding.

Respectfully submitted,

Mary McDermott

Mary McDermott
Vice President -
Legal & Regulatory Affairs

UNITED STATES TELEPHONE ASSOCIATION

TOTAL FACTOR PRODUCTIVITY (TFP) INSTRUCTIONS MANUAL

As displayed in the attachments, developing a TFP study is a simple eight step process. Almost all of the data inputs (90%) required for the study are available from public sources filed with the FCC. In addition to the inputs, an updated Christensen TFP study, covering the period 1984-1993, is also on file with the Commission. USTA filed this study as an Ex Parte exhibit on January 18, 1995 in CC Docket 94-1. The filing included paper and diskette copies of the study. The diskette copy is in a standard Lotus 1-2-3 (version 3) format which facilitates ongoing revisions to the TFP analysis.

The Christensen TFP study, commissioned by USTA, reflects data for the seven regional Bell Operating companies, GTE and Southern New England Telephone. Total Factor Productivity is the ratio of total output to total input, where total output includes all services provided by the Local Exchange Carriers and total input includes the capital, labor and materials used to provide those services.

Attached is a two part TFP Instructions Manual which details the steps necessary to update the Christensen TFP study. Attachment A list the major steps required to update the TFP in general. It also provides Lotus cell references for all inputs required to update the analysis for 1994 data. Attachment B provides detailed step-by-step instructions on how the LECs developed their Telephone Plant Indexes (TPIs). These TPIs were developed as part of the first step in the TFP process.

ATTACHMENT A

UPDATING TFP - STEPS IN THE PROCESS

Step 1 Update "Capital Input Analysis" Worksheet:

- Populate Current Dollar Investment input section (Lotus cells A:L8..A:L13) with ARMIS 43-02 additions to plant in service.

- Populate Asset Prices input section (Lotus cells A:L20..A:L25) with updated TPI data for current year (see additional writeup on TPIs).

- Develop LEC cost of capital and input at Lotus cell A:L125. LECs used Moody's Composite Public Utility Bond Yield as a proxy for their cost of capital.

- LEC depreciation rates (Lotus cells A:AD5..A:AD7) based on Dale Jorgensen Study of Economic Depreciation rates. These rates will help develop LEC capital stock values.

- 1984 Gross Stock, Economic Stock/Gross Stock Adjustment Factor and Capital/Expense Shift inputs all reflect historical data that are not updated for on-going TFP analyses.

Step 2 Update "MRS Expense Input" Worksheet (Lotus cell G17) for total current year operating expenses (excluding compensation expense and depreciation). Also, update GDPPI inputs (Lotus cell Q17) to develop deflated (real) operating expenses for the current year. The 1984 through 1987 Nonregulated Expense and Capital/Expense Shift Adjustments reflect historical data that are not updated for on-going TFP analyses.

Step 3 Update "Labor Input" worksheet for current year salaries & wages, benefits, labor hours and average number of employees for both management and nonmanagement labor.

- Management data are located at Lotus cells L5..L9

- Nonmanagement data are located at Lotus cells L10..L14

Step 4 Update Operating Revenues worksheet for current year booked (Lotus cells A:K5..A:K15) and billed (Lotus cells A:K22..A:K24) revenues. The 1984 Special Access and 1984 through 1987 Nonregulated Adjustments reflect historical data that are not updated for on-going TFP analyses.

Step 5 Update "Special Access Price Index" (Lotus cell F31) for current year API as reported on LECs' Annual Price Cap TRPs.

Step 6 Update "Rate Changes for Intrastate Price Indexes" worksheet:

- Booked (ARMIS 43-04) Revenues are located at Lotus cells C17 (Local), C33 (Toll) and C50 (Intrastate Access).

- Credit Amounts are located at Lotus cells B17 (Local), B33 (Toll) and B50 (Intrastate Access).

- Annualized Revenue Changes are located at Lotus cells D17 (Local), D33 (Toll) and D50 (Intrastate Access).

- Effective Revenue Changes are located at Lotus cells E17 (Local), E33 (Toll) E50 and (Intrastate Access).

Step 7 Update "Common Line & Traffic Sensitive" worksheet:

- MOUs are located at Lotus cells A:B15 (CL) and A:C15 (Traffic Sensitive).

- Revenues are located at Lotus cells A:E15 (CL) and A:F15 (Traffic Sensitive).

Step 8 Update "Access Lines" worksheet for end of year Switched Access Lines in Service

- RBOC data is located at Lotus cell C16

- GTE data is located at Lotus cell D16

- SNET data is located at Lotus cell E16

Following are sources for inputs required to update ongoing TFP analyses. In most cases, inputs can be derived from ARMIS reports (43-01, 43-02, 43-04 and 43-08) filed with the FCC. Other inputs (e.g. LEC cost of capital, GDPPI) are readily available as well, as they are reported on publicly available documents. Few inputs (e.g. disaggregation of composite labor data) require special studies by the LECs; however, the underlying data for these special studies reflect ARMIS data..

TFP INPUTS - SOURCES OF HISTORICAL DATA

Worksheet	Item	Source
* Capital Input Analysis	Current Dollar Investment	Reflect additions to plant in service as reported on Form M, Table 12A, Col d and ARMIS 43-02, Table B-1-3 (Balance Sheet Accts), Col (ac)
	Asset Prices	LEC TPI Analyses. See additional writeup on TPIs.
	Cost of Capital	Moody's Composite Public Utility Bond Yield
	Depreciation Rates	Dale Jorgensen Study of Economic Depreciation Rates
	1984 Gross Stock	Reflects the cost of reproducing gross plant for each LEC. Based on analysis of LECs' records.
	Econo Stock/Gross Stock Adjust Factor	Reflects the decline in economic value of gross stock of various vintages. Reflects analysis of Bureau of Economic Analysis (BEA) of the Telecommunications Industry's 1984 gross and economic capital stock
	1984 - 1987 Cap/ Exps Shift	Reflects the shift in costs from capital accounts to expenses accounts resulting from the FCC's change in accounting rules from Part 31 to Part 32. Analysis of 1988 TRP, Forms COS-2(P)31 and COS-2(P)32.
* MRS Expense Inputs	Composite Expenses	Reflect total company operating expenses (excluding salaries, wages, benefits and depreciation) as reported on: 1984 - 1987 Form M reports, (Table 35, Col (b), Row 68-Row 19-compensation expense + Table 36A, Col (f), Row 26

Worksheet	Item	Source
* MRS Expense Inputs	Composite Expenses	1988 - 1993 ARMIS 43-02 reports, Table I-1 (Income Statement Accounts), Cols (ab)-(ac)-(ad), Rows 720-6561
	1984-1987 Nonreg Exp Adjst	Analysis of company records; separately identifies nonregulated expenses reflected in Total Company Form M costs.
	Cap/Exps Shift (1984-1987)	Analysis of 1988 TRP, Forms COS-2(P)31 and COS-2(P)32.
	GDPPI	Used to deflate MRS expenses to reflect MRS quantities (real expenses). Reflects U.S. Government statistics, analysis of BEA
* Composite Labor Data	Management and Nonmanagement costs and labor hours distributions were determined based on analysis of LECs' records. Total labor costs reflect expensed amounts reported on Form M and ARMIS 43-02 reports.	
	Labor Hours	Analysis of LEC records
	Average # of Employees	Analysis of LECs records
	1984 - 1987 Sal & Wages	Analysis of Form M, Table 35,Row 68, Col (b)
	1984 - 1987 Benefits	Analysis of Form M, Table 35,Row 68, Col (b)
	1988 - 1993 Sal & Wages	Armis 43-02, Table I-1 (Income Statement Accounts), Row 720, Col (ac)
	1988 - 1993 Benefits	ARMIS 43-02, Table I-1 (Income Statement Accounts), Row 720, Col (ad)

Worksheet	Item	Source
* Output Indexes (Operating Revenues)	Booked Revenues	1984 through 1987 - Form M, Table 34 :
	Local	Row 13, Col (b)
	EU IS Access	Row 15, Col (d)
	Switched IS Access	Row 16, Col (d)
	Special IS Access	Row 17, Col (d)
	Intrastate Access	Row 19, Col (b)
	Total Toll	Row 31, Col (b)
	Total Misc	Row 40, Col (b)
	Total Uncoll	Row 41, Col (b)
	Nonreg Adjst	Analysis of company records; separately identifies nonregulated revenues in account 5280 reflected in Total Company Form M revenues.
	1984 Special Access Adjst	Analysis of 1985 Ad Hoc Data Reporting Task Group Submissions. Reflects misclassified Special Access Revenues.
	Booked Revenues	1988 - 1993 Jurisdictional revenues, ARMIS 43-04 Table I:
	EU IS Access	Row 4010 and EU portion of Row 4012, Col (d)
	Switched IS Access	Row 4011, Col (d)
	Special IS Access	Row 4012, Col (d)
	Intrastate Access	Row 4013, Col (d)
	Booked Revenues	1988 - 1993 Total company revenues, ARMIS 43-02 Table I (Income Statement Accounts):
	Local	Row 520, Col (b)
	Total Toll	Row 525, Col (b)
	Total Misc	Row 5200, Col (b)
	Total Uncoll	Row 5300, Col (b)
	Billed Revenues	Analysis of companies' records

Worksheet	Item	Source
* Special Access Price Index		Reflects the relative change in Special Access prices:
	1988 - 1992 indexes	Reflect input data which supported Special Access Portion of Frenthrup/Uretsky TFP analysis done by NERA.
	1984 - 1987 indexes	Reflect the average 1988 - 1992 index.
	1993 index	Reflects Special Access API as reported on LECs annual price cap TRP filings.
* Rate Changes for Intra-state Price Indexes	Booked Revenues	1984 - 1987 Form M, Table 34, analysis of Col (b):
	Local	Row 13
	Intrastate Access	Row 19
	Total Toll	Row 31
	Booked Revenues	1988 - 1993 ARMIS 43-04 Table I:
	Local	Row 4005, Col (c)
	Intrastate Access	Row 4013, Col (c)
	Total Toll	Row 4024, Col (c)
	Revenue Changes & Credits	Reflect impact of state utility commissions' orders in state rate case proceedings.
* CL & TS MOU and Revs	Minute of Use	Reflect derived MOUs as reported on:
		1984 - 1987 Annual TRP, Table DMD3:
	Common Line	Row 130, Col A
	Traffic Sensitive	Row 130, Col B
		1988 - 1993 ARMIS 43-01, Table II, Cols (b) through (d) sum of four quarterly reports:
	Common Line	Rows 2010 through 2040
	Traffic Sensitive	Rows 2050 + 2060

Worksheet	Item	Source
* CL & TS MOU and Revs	Revenues	Reflect booked revenues as reported on:
		1984 - 1987 Annual TRP , Table COS 1H:
	Common Line	Row 175, Col K
	Traffic Sensitive	Row 175, Col P
		1988 - 1993 ARMIS 43-01, Table I:
	Common Line	Row 1020, Col (m)
	Traffic Sensitive	Row 1020, Col (r)
* Switched Access Lines	Demand Data	1984 - 1990, DMD2, Row 170
		1991 - 1993, ARMIS 43-08, Row 0910, Col (cj)

ATTACHMENT B

TELEPHONE PLANT INDEXES (TPIs)

DEFINITION:

Telephone Plant Indexes are measures of the relative changes in the cost of constructing telephone plant-in-service (including materials and labor components), with respect to the embedded base of telephone plant. All major elements of cost are included in constructing the TPI. They are capital purchases (materials), contracted labor and engineering, company labor and company engineering. Using an index year of 1984, the TPI plant accounts are weighted to a composite index using the dollar value of current year booked costs.

The TPI is a variable weight price index. The calculations are based on a generally accepted adaptation of the Divisia Index which takes the growth rates of individual prices (the various telephone plant accounts) between successive periods and weights each by its proportion of total expenditure in the latest period. Its advantage is that, as a variable weight type price index, improvements made in technology or technology shifts are automatically reflected by the dollars reported in each account. For example, if new equipment decreases the amount of time it takes for an installer to complete his job, this will be reflected in the dollars for associate labor. As network composition shifts from copper to fiber, efficiencies gained from the new technology in added capacity will be reflected in plant subaccounts with fiber by a materials weight inversely related to the increased capacity.

DEVELOPMENT OF TPIs:

The TPI is developed using company data sources such as: subsidiary ledgers that support the ARMIS 43-02 and Form M reports and financial systems. The TPI for each sub-account is calculated separately, then aggregated to form the overall TPI. Within each subaccount, the growth rates of each component is calculated separately, and then weighted together each year. These components are materials, company labor costs and contract labor costs. The components are aggregated for a given subaccount based on the portion of actual capital dollars in that subaccount devoted to each component in a given year.

Actual data are used to calculate the current year growth rate for each component of each subaccount. The weights used to aggregate the materials and labor costs are updated periodically. The weights used to aggregate subaccounts are determined each year based on booked costs, as reflected in company subsidiary ledgers. For example, 1993 dollars were used for computation of the 1993 TPIs which became available in the third quarter of 1994.